Table S1. Film thicknesses of all sensors, measured by profilometry (average of three measurements), and baseline resistances (R_b).

	PVAc array		PVPd array	
% DGD	film thickness (nm)	R_b (kΩ)	film thickness (nm)	R_b (kΩ)
0	418	17.3	6380	31.8
0	487	33.5	8624	25.0
5	459	16.0	4953	38.1
5	477	16.5	3646	35.0
10	418	16.6	3788	62.1
10	546	18.2	3640	75.0
15	459	10.0	2254	143
15	453	14.2	2608	301
20	400	14.3	2045	105
20	420	15.3	1825	48.4
25	494	13.5	929	8.2
25	370	15.5	899	8.7
30	485	12.7	483	99.1
30	560	20.1	531	58.5
35	362	18.8	617	15.2
35	289	33.0	373	18.6
40	410	17.4	386	55.0
40	388	22.2	334	53.6
45	383	15.6	473	36.0
45	456	14.5	382	43.5
50	499	13.7	488	34.6
50	483	13.8	309	31.0
55	302	29.4	425	59.4
55	341	25.2	276	43.9
60	516	16.9	305	100
60	320	21.3	328	152
65	403	15.7	247	66.7
65	391	18.3	279	84.4
70	373	15.9	239	52.9
70	275	21.5	322	56.0
75	363	14.0	422	81.2
75	418	10.9	352	88.6
80	353	16.8	305	41.6
80	371	19.2	372	47.1
85	431	11.4	296	82.0
85	336	11.9	107	113.4
90	242	18.9	238	87.1
90	246	13.1	143	105
95	322	27.9	211	65.4
95	251	28.3	180	97.7

Table S2. Average responses ($100\ \Delta R_{max} / R_b$) of the PVAc / DGD / carbon black composite array.

%DGD	Methylene Chloride	Tetrahydro-furan	Toluene	Hexane	Ethanol	Acetone	Ethyl Acetate	Acetoni-trile	Cyclohex-anone	Chloro-form	Methanol
0	0.84 (0.04)	0.06 (0.06)	0.04 (0.05)	0.00 (0.05)	0.29 (0.06)	0.29 (0.06)	0.10 (0.05)	0.63 (0.05)	0.02 (0.07)	0.14 (0.05)	0.58 (0.06)
5	1.08 (0.07)	0.08 (0.06)	0.05 (0.05)	0.00 (0.05)	0.32 (0.05)	0.34 (0.06)	0.10 (0.05)	0.51 (0.04)	0.03 (0.06)	0.15 (0.05)	0.49 (0.05)
10	1.44 (0.13)	0.11 (0.06)	0.06 (0.05)	0.01 (0.05)	0.35 (0.05)	0.44 (0.09)	0.12 (0.05)	0.38 (0.03)	0.03 (0.06)	0.19 (0.06)	0.38 (0.05)
15	1.95 (0.23)	0.10 (0.06)	0.06 (0.05)	0.01 (0.05)	0.36 (0.06)	0.52 (0.11)	0.12 (0.05)	0.34 (0.03)	0.03 (0.06)	0.18 (0.05)	0.36 (0.05)
20	5.32 (0.59)	0.27 (0.08)	0.15 (0.06)	0.04 (0.05)	0.59 (0.07)	1.27 (0.28)	0.33 (0.06)	0.56 (0.04)	0.05 (0.06)	0.69 (0.12)	0.54 (0.05)
25	9.85 (0.26)	0.74 (0.10)	0.44 (0.07)	0.09 (0.05)	1.15 (0.05)	3.07 (0.28)	1.24 (0.15)	1.35 (0.08)	0.20 (0.06)	3.46 (0.43)	1.20 (0.07)
30	8.38 (0.16)	2.06 (0.14)	1.54 (0.14)	0.22 (0.02)	1.38 (0.07)	4.26 (0.16)	3.47 (0.21)	1.61 (0.09)	0.86 (0.14)	10.0 (0.3)	1.45 (0.09)
35	6.56 (0.22)	2.51 (0.14)	2.91 (0.14)	0.42 (0.03)	0.10 (0.05)	3.00 (0.12)	3.19 (0.11)	1.01 (0.09)	2.45 (0.07)	9.6 (0.4)	1.05 (0.06)
40	5.76 (0.30)	2.18 (0.10)	2.85 (0.14)	0.43 (0.04)	0.81 (0.03)	2.56 (0.11)	2.82 (0.11)	0.76 (0.04)	3.18 (0.15)	8.8 (0.5)	0.92 (0.06)
45	5.24 (0.22)	2.08 (0.05)	2.76 (0.11)	0.42 (0.07)	0.73 (0.06)	2.36 (0.09)	2.64 (0.07)	0.65 (0.06)	3.25 (0.10)	8.1 (0.3)	0.87 (0.11)
50	5.29 (0.20)	2.25 (0.05)	2.93 (0.10)	0.48 (0.03)	0.71 (0.02)	2.43 (0.07)	2.88 (0.07)	0.68 (0.02)	3.68 (0.12)	8.5 (0.3)	0.69 (0.03)
55	3.14 (0.18)	1.40 (0.08)	1.81 (0.09)	0.39 (0.06)	0.46 (0.06)	1.48 (0.09)	1.75 (0.09)	0.39 (0.04)	2.22 (0.11)	5.0 (0.3)	0.57 (0.06)
60	3.64 (0.13)	1.64 (0.04)	2.11 (0.04)	0.43 (0.06)	0.52 (0.05)	1.70 (0.06)	2.06 (0.05)	0.44 (0.04)	2.61 (0.04)	5.8 (0.1)	0.62 (0.07)
65	3.81 (0.15)	1.80 (0.05)	2.27 (0.06)	0.45 (0.05)	0.50 (0.05)	1.79 (0.07)	2.09 (0.08)	0.44 (0.04)	2.71 (0.07)	5.6 (0.2)	0.49 (0.06)
70	3.85 (0.16)	1.85 (0.05)	2.32 (0.06)	0.46 (0.05)	0.49 (0.05)	1.80 (0.06)	2.08 (0.06)	0.42 (0.04)	2.75 (0.06)	5.6 (0.2)	0.50 (0.08)
75	4.01 (0.15)	2.00 (0.04)	2.50 (0.04)	0.51 (0.05)	0.51 (0.04)	1.92 (0.06)	2.28 (0.05)	0.44 (0.03)	3.06 (0.06)	6.0 (0.2)	0.54 (0.06)
80	3.72 (0.17)	1.94 (0.07)	2.43 (0.08)	0.52 (0.06)	0.47 (0.05)	1.80 (0.08)	2.11 (0.05)	0.40 (0.04)	2.84 (0.06)	5.3 (0.1)	0.51 (0.08)
85	4.34 (0.17)	2.31 (0.06)	2.90 (0.06)	0.59 (0.06)	0.52 (0.04)	2.09 (0.07)	2.45 (0.07)	0.45 (0.04)	3.40 (0.10)	6.2 (0.2)	0.59 (0.08)
90	4.19 (0.25)	2.32 (0.11)	2.95 (0.15)	0.57 (0.12)	0.50 (0.07)	2.06 (0.13)	2.05 (0.11)	0.37 (0.09)	2.84 (0.10)	4.8 (0.2)	0.62 (0.14)
95	3.67 (0.40)	2.13 (0.21)	2.71 (0.27)	0.62 (0.16)	0.45 (0.12)	1.86 (0.19)	2.24 (0.25)	0.39 (0.14)	3.14 (0.36)	5.1 (0.7)	0.70 (0.19)

The numbers in parentheses are the standard deviations of the quantities listed in the table.

Table S3. Average responses (100 $\Delta R_{max} / R_b$) of the PVPd / DGD / carbon black composite array.

%DGD	Methylene Chloride	Tetrahydro -furan	Toluene	Hexane	Ethanol	Acetone	Ethyl Acetate	Acetoni-trile	Cyclohex-anone	Chloro-form	Methanol
0	1.41 (0.20)	0.09 (0.11)	0.07 (0.15)	0.00 (0.13)	2.22 (0.29)	0.47 (0.11)	0.20 (0.20)	3.28 (0.73)	0.05 (0.18)	0.50 (0.22)	12.8 (1.4)
5	1.30 (0.18)	0.05 (0.12)	0.06 (0.11)	0.00 (0.09)	2.24 (0.32)	0.36 (0.08)	0.06 (0.17)	3.95 (0.87)	0.03 (0.17)	0.28 (0.16)	14.3 (1.5)
10	2.80 (0.27)	0.02 (0.14)	0.08 (0.17)	0.03 (0.10)	3.46 (0.30)	0.64 (0.16)	0.09 (0.15)	4.92 (0.98)	0.03 (0.19)	0.41 (0.20)	14.3 (1.5)
15	4.33 (0.74)	-0.02 (0.19)	0.09 (0.21)	0.02 (0.14)	4.70 (0.69)	1.01 (0.23)	0.04 (0.19)	5.1 (0.9)	-0.05 (0.22)	0.48 (0.17)	13.3 (1.5)
20	3.76 (0.44)	0.05 (0.13)	0.09 (0.13)	0.09 (0.10)	3.53 (0.35)	0.96 (0.13)	0.12 (0.13)	3.00 (0.42)	-0.01 (0.14)	0.45 (0.15)	8.4 (0.6)
25	5.3 (0.5)	0.20 (0.10)	0.23 (0.12)	0.14 (0.06)	3.72 (0.33)	1.57 (0.19)	0.62 (0.16)	2.46 (0.27)	0.14 (0.09)	1.42 (0.18)	6.1 (0.2)
30	9.5 (0.7)	0.88 (0.17)	0.78 (0.19)	0.31 (0.06)	5.70 (0.58)	3.38 (0.41)	2.18 (0.34)	2.69 (0.26)	0.49 (0.18)	6.90 (0.55)	6.8 (0.4)
35	10.2 (0.7)	1.19 (0.18)	1.11 (0.20)	0.37 (0.06)	5.51 (0.63)	3.38 (0.41)	2.64 (0.40)	2.58 (0.20)	0.85 (0.15)	13.0 (1.0)	6.7 (0.3)
40	10.7 (0.8)	2.26 (0.22)	2.53 (0.30)	0.69 (0.07)	5.87 (0.75)	3.82 (0.45)	3.62 (0.51)	2.50 (0.27)	2.60 (0.28)	28.4 (2.0)	6.9 (0.7)
45	12.0 (0.6)	2.74 (0.24)	3.43 (0.35)	0.74 (0.10)	6.02 (0.77)	3.81 (0.43)	3.49 (0.44)	2.23 (0.29)	3.59 (0.32)	32.6 (2.0)	6.7 (1.2)
50	10.9 (0.3)	2.59 (0.19)	3.53 (0.34)	0.65 (0.045)	5.23 (0.56)	3.33 (0.38)	3.24 (0.35)	1.90 (0.27)	4.00 (0.26)	30.0 (1.3)	6.1 (1.2)
55	8.8 (0.8)	2.25 (0.22)	3.21 (0.38)	0.56 (0.04)	4.30 (0.53)	2.76 (0.34)	2.70 (0.38)	1.50 (0.30)	3.77 (0.35)	22.5 (1.9)	5.0 (1.4)
60	7.2 (0.3)	2.23 (0.17)	3.09 (0.25)	0.65 (0.06)	3.47 (0.38)	2.53 (0.25)	2.54 (0.35)	1.26 (0.25)	3.60 (0.28)	17.3 (0.6)	4.0 (1.0)
65	6.2 (0.1)	2.17 (0.05)	2.92 (0.09)	0.63 (0.04)	2.43 (0.20)	2.14 (0.08)	2.14 (0.10)	0.93 (0.10)	3.16 (0.06)	14.1 (0.9)	2.54 (0.31)
70	4.7 (0.1)	1.85 (0.06)	2.39 (0.09)	0.62 (0.04)	1.59 (0.10)	1.71 (0.06)	1.89 (0.06)	0.72 (0.05)	2.76 (0.06)	10.5 (1.0)	1.73 (0.17)
75	4.62 (0.43)	2.01 (0.18)	2.49 (0.21)	0.64 (0.05)	1.42 (0.13)	1.78 (0.16)	2.10 (0.14)	0.72 (0.07)	3.06 (0.23)	10.0 (1.3)	1.54 (0.24)
80	4.16 (0.35)	2.05 (0.15)	2.51 (0.19)	0.69 (0.06)	1.23 (0.14)	1.77 (0.13)	2.22 (0.13)	0.70 (0.06)	3.22 (0.19)	8.9 (0.8)	1.25 (0.13)
85	3.13 (0.89)	1.92 (0.32)	2.30 (0.40)	0.70 (0.07)	1.00 (0.21)	1.63 (0.25)	2.12 (0.30)	0.62 (0.10)	3.01 (0.48)	7.3 (1.1)	0.95 (0.14)
90	2.2 (1.1)	1.98 (0.33)	2.30 (0.40)	0.75 (0.14)	0.87 (0.25)	1.67 (0.23)	2.18 (0.28)	0.60 (0.11)	3.07 (0.43)	6.6 (0.9)	0.82 (0.10)
95	3.8 (1.3)	3.03 (0.56)	3.49 (0.69)	0.94 (0.17)	1.00 (0.27)	2.46 (0.44)	3.27 (0.48)	0.83 (0.16)	4.73 (0.73)	8.9 (1.2)	0.85 (0.15)
95	3.67 (0.40)	2.13 (0.21)	2.71 (0.27)	0.62 (0.16)	0.45 (0.12)	1.86 (0.19)	2.24 (0.25)	0.39 (0.14)	3.14 (0.36)	5.1 (0.7)	0.70 (0.19)

The numbers in parentheses are the standard deviations of the quantities listed in the table.